



TABLE OF **CONTENTS**

1. Illegal Tobacco at a Glance	3
2. Executive Summary	4
3. Background	6
4. Relationship between Tobacco Tax Policy, Affordability and Illegal Trade	9
5. Controlling Illegal Tobacco Trade: The Role and Limits of Enforcement	14
6. Emerging Nicotine and Tobacco Products: A New Dimension in Illegal Trade	19
7. Overall Conclusions	25

APPENDICES

1.	Methodology	26
II.	Glossary of Terms	29
III.	Bibliography	30

I ILLEGAL TOBACCO AT A GLANCE

WHAT'S THE PROBLEM?

➤ The illegal tobacco trade undermines public health objectives and funds organized crime and terrorist activities, as well as costing \$40-\$50 billion in lost global tax revenue every year that could be invested in essential services.



WHAT'S CAUSING IT?

- Tobacco taxes are typically increased with the twin objectives of reducing the adverse health outcomes associated with smoking and strengthening tax revenues.
- >> However, increasing the price of tobacco and reducing affordability encourages smokers to seek cheaper products and creates opportunities for criminals. Even with the moderating effect of enforcement, less affordable tobacco products result in more illegal trade.



WHAT HAVE WE FOUND?

- The analysis found a strong causal link between the affordability of cigarettes and illegal trade: when smokers need to spend a higher share of their daily personal income to buy cigarettes, due to an increase in taxation, the share of illegal tobacco increases.
- >> If cigarettes were to become more expensive, requiring the average global smoker to spend 19.1% of their daily disposable incomes versus 18.1% currently, the share of illegal trade in the global cigarette market would increase to 15.5%, from 14.7% currently.



WHAT CAN BE DONE?

- Relevant stakeholders should be aware of the impacts that decisions on tax policy have on the affordability of tobacco and hence on consumers switching to illegal products.
- >> Attention should also be paid to understanding and establishing the appropriate level of enforcement to mitigate the destructive impact of illegal trade.



2 EXECUTIVE SUMMARY

Having analyzed a majority of the world's most important cigarette markets, we show that:

- As the dominant component of retail prices and the major force behind less affordable tobacco products, taxation should be regarded as the driving factor behind the increase in affordability pressure of legal tobacco products. The data analysis shows that the availability of illegal tobacco products grows when legal tobacco products become less affordable. When cigarette prices rise more quickly than consumer incomes, consumers begin to seek cheaper alternatives and switch to illegal products.
- Price changes that make cigarettes less affordable result in increased illegal share across markets. On average, we found that for each additional percentage point of income needed to buy a pack of cigarettes, the share of illegal tobacco increases by 0.8 percentage points. This implies that if the average global smoker would have to spend 19.1% instead of the current 18.1% of their daily disposable income to buy one pack of cigarettes, the share of illegal trade is estimated to rise to 15.5%, from 14.7% currently.
- Our analysis found evidence that improvements to the highest levels of enforcement, in comparison to reference countries, decrease the illegal market share by 1.6 percentage points. We also found robust evidence of spillover effects of illegal tobacco market penetration across countries due to geographical features (e.g. land borders).
- 4 Prudent regulation and reasonable taxation of reduced risk products¹ (RRPs) are critical to deal with the growing issue of illegal trade in RRPs. As highlighted by the case studies showing countries' responses to the rise of these products, outright bans in particular can give rise to illegal trade, especially of e-cigarettes.
- The global economic climate, with persistent inflation and higher interest rates hurting consumers' wallets, may aggravate the problem of illegal trade. It is known that in times of high cost-of-living, consumers are more likely to turn to cheaper, often illegal products. In the U.K., the Trading Standards' Impacts and Outcomes report in 2022 anticipated² that the threat from counterfeit goods would increase due to financial pressures on households and businesses. Policymakers seeking to bolster public finances should change tack and carefully consider the risks of less affordable tobacco, which may only result in higher demand for illegal products, lower revenues and weaker public health outcomes.



71 countries across 17 years (2005–2022), representing 81% of global cigarette volumes and 91% of global cigarette retail value, excluding China.

Key findings:

The correlation between taxation and cigarette prices is 94%.

If cigarettes become 1 percentage point more expensive relative to consumers' income, the result will be growth of around 0.8 percentage points in illegal trade share.



BACKGROUND

According to the International Monetary Fund (IMF)3, the loss of tax revenues globally owing to illegal tobacco trade is estimated at \$40 billion to \$50 billion annually.

Illegal trade in tobacco continues to grow, with illicit global volumes (excluding China) estimated to reach more than 400 billion sticks by 2027⁴. Australasia and Latin America have experienced the fastest growth rates in illicit volumes since 2017. In Australasia, this has been driven largely by substantial excise increases, while in Latin America, continuing price sensitivity among Brazilian smokers has led to an increase in demand for illegal products⁵.

Illegal trade in numbers

\$40b to \$50b

is the annual revenue loss in tobacco taxation globally



400 billion

cigarette sticks is the estimated volume of global illegal tobacco trade by 2027, excluding China



1 million

cigarettes a day is the manufacturing capacity of some illegal factories in the EU



New and old challenges in the fight against illegal trade

In recent years, new challenges have emerged in the fight against the illegal trade of tobacco. One of the biggest threats facing law enforcement agencies is the proliferation of illegal cigarette factories, particularly in Europe. The shift from smuggling illegal cigarettes from outside the European Union (EU) to setting up production facilities within its borders was first seen during the Covid-19 pandemic, but it is now gaining pace.

International officials working with the European anti-fraud office, OLAF, seized more than half a billion illegal cigarettes, more than 205 tonnes of raw tobacco and 65 tonnes of water-pipe tobacco in 2022⁶. Some illegal factories in the EU have the capacity to manufacture up to one million cigarettes a day.

The proliferation of these factories is exacerbating the illegal tobacco trade, already of concern to authorities in Europe. A 2022 report⁷ published by the European Union Intellectual Property Office and Europol noted that while tobacco consumption has seen a "continuous decrease" in recent years, the share of illegal consumption remains high, representing 7.8% of total cigarette consumption and a loss of 8.5 billion euros in tax revenues.

Another challenge facing authorities is the trade of illegal tobacco products online, including on social media marketplaces and auction sites. According to a 2018 report by think-tank RUSI⁸, the rapid growth of e-commerce and small parcel delivery services has had a significant impact on the illegal tobacco trade. In its research conducted in the U.K., France and Germany, RUSI found evidence that online platforms were being used both by opportunistic individual sellers and organized crime groups with international networks.

Consumers' shift to online shopping habits during the pandemic makes stronger enforcement action against e-commerce platforms crucial in combating illegal tobacco trade.

"The illegal tobacco trade is not only an economic problem. It also involves tax evasion and trademark infringement. And illegal cigarettes are often even more harmful to health than those sold legally."

Government of the Netherlands, Ministry of Finance, 2023

RRPs add new dimension to illegal trade

The growing appeal of RRPs, notably e-cigarettes, is adding a new dimension to the problem of illegal trade. Demand for these alternatives to smoking has increased exponentially in recent years, with governments around the world adopting different regulatory approaches towards them.



Contrasting policy responses have led to different RRP market outcomes. In countries where outright bans have been introduced, illegal consumption of RRPs has flourished. In the U.S., unauthorized e-cigarettes have flooded the market after a new, lengthy process for approval was introduced. Despite millions of applications by manufacturers, the regulator has greenlit only about two dozens products. It has also struggled to enforce the new standards for the industry.

Illegal tobacco is not a victimless crime

Illegal tobacco is often perceived as a victimless crime by many consumers. However, the United Nations Security Council's investigative body, and several national enforcement agencies around the world, have reported that illegal trade in tobacco has become a major security problem for countries as revenues from it are being increasingly used to fund terrorism. According to the OECD⁹, "[t]he illegal trade in tobacco is perhaps the most widespread and most documented sector in the shadow economy."

The illegal trade of cigarettes and alternative products represents not only lost revenues for governments, but also undermines public health objectives as these products usually do not comply with local laws around safety and quality standards. According to the World Bank, illegal tobacco products are disproportionately consumed by low-income populations, and are often distributed via unregulated channels, increasing access for youth.

Understanding the challenges and changing dynamics in this post-pandemic landscape, including taxation policy and its effects on the affordability of tobacco products, is key to tackling the issue.

In this report, based on a robust data analysis, we aim to present an objective view of the causes of the illegal tobacco trade that can inform fiscal and anti-illicit trade (AIT) policy development as well as support more effective enforcement by governments.



RELATIONSHIP BETWEEN TOBACCO TAX POLICY, AFFORDABILITY AND ILLEGAL TRADE

The economics of the tobacco category work in the same way as any other consumer product category.

When consumers are confronted with rising prices, some will switch to take advantage of cheaper alternatives.

In this chapter, we explore the connection between taxes on tobacco, the affordability of tobacco products, and the effect on the illegal tobacco trade, based on our exclusive econometric analysis (see Appendix 1 for details on the methodology).

Key Insights

Modelling 71 markets over 17 years, we demonstrate a causal relationship between the affordability of cigarettes and the consumption of illegal tobacco.



If cigarettes become 1 percentage point more expensive relative to consumers' income, the result will be growth of around 0.8 percentage points in illegal trade share.



We found evidence that lower-income groups are likely to be more susceptible to substituting to illegal tobacco when their economic situation deteriorates due to unemployment.



EFFECTS OF AFFORDABILITY PRESSURE ON ILLEGAL TRADE

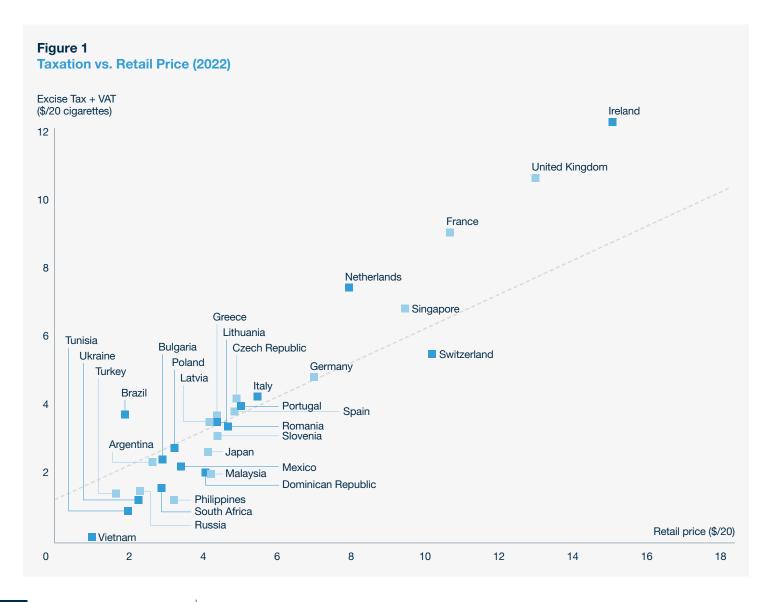
The price of tobacco is not simply a product of market forces: it is just as much a matter of tax policy. The analysis demonstrates a 94% correlation between the tax¹⁰ on each pack of cigarettes and the corresponding level of prices to consumers.

Due to that strong correlation, tax policies can often result in price increases that exert additional pressure on affordability, which in turn can contribute to more consumers seeking cheaper, illegal alternatives.

To investigate how higher taxes and prices on cigarettes can affect personal budgets and influence illegal consumption, we conducted an econometric analysis of data covering 71 tobacco markets between 2005 and 2022. The data set represents 91% of the global cigarette volume and 81% of the global cigarette retail value, excluding China.

The analysis shows a strong causal link between the affordability of cigarettes and illegal trade: when smokers need to spend a higher share of their personal incomes to buy cigarettes due to increases in taxation, the market share of illegal tobacco rises.

On average, we found that for each additional percentage point of income needed to buy a pack of cigarettes, the share of illegal tobacco increases by 0.8 percentage points. This implies that if the average global smoker would have to spend 19.1% instead of the current 18.1% of their daily disposable income to buy one pack of cigarettes, the share of illegal trade is estimated to rise to 15.5%, from 14.7% currently.



We also found further evidence of that correlation when looking at the impact of cigarette prices on lower-income households.

Using data on unemployment as a proxy for these populations, we showed that when unemployment goes up, illegal trade rises in tandem.

For every 1 percentage point increase in the unemployment rate, the illegal market share expands by around 0.6 percentage points, according to our modelling. This suggests that lower-income groups are likely to be more susceptible to substituting to illegal tobacco when their economic situation deteriorates due to unemployment.

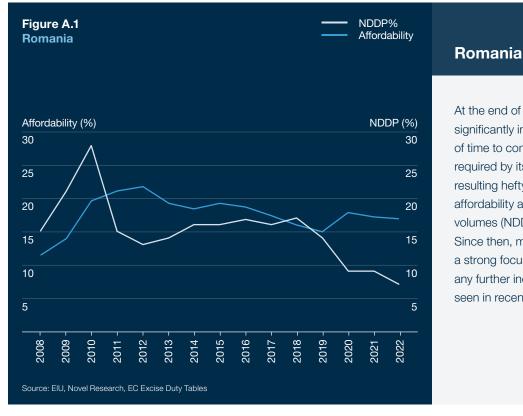


Between March and August 2020, the South African government imposed a ban on the sale of all tobacco and e-cigarette products as part of its response to the Covid-19 pandemic crisis.

Our analysis shows how the temporary ban quickly boosted illegal trade in the country. The illegal market share in South Africa was 10 percentage points higher than what was expected given levels of affordability pressure, unemployment and RRP market share observed in South Africa at the time.

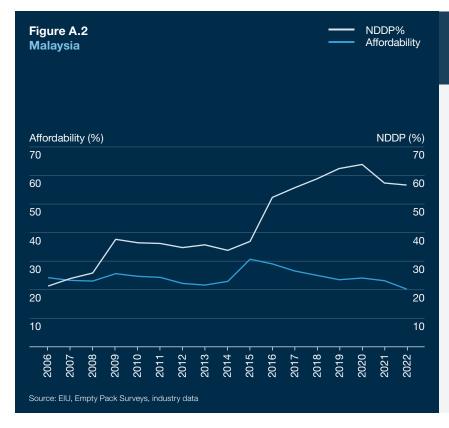
Previous progress in tackling illegal trade was also undermined by the ban. A University of Cape Town report¹¹ stated that illegal channels that played a negligible role prior to lockdown - such as street vendors, friends and family or messaging apps - became established during the lockdown period.

AFFORDABILITY AND ILLEGAL TRADE **COUNTRY CASE STUDIES**



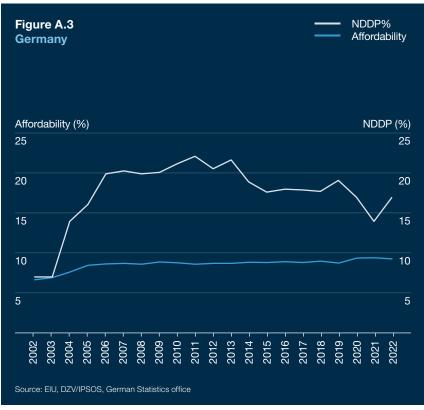
At the end of the 2000s, Romania had to significantly increase excise over a short period of time to comply with EU minimum rates as required by its EU accession in 2007. The resulting hefty price increases rapidly reduced affordability and non-domestic duty paid volumes (NDDP) approached 30% in 2010. Since then, more moderate tax increases and a strong focus on enforcement have prevented any further increases in NDDP, with declines seen in recent years.

AFFORDABILITY AND ILLEGAL TRADE **COUNTRY CASE STUDIES**



Malaysia

Malaysia is one of the most pressured countries in terms of cigarette affordability and has historically had high levels of illegal consumption. A 37% excise tax increase in November 2015 caused NDDP consumption to grow rapidly from an already high level, surpassing 60% of total consumption. Even though affordability pressure eased in recent years, the embedded illegal trade remained high, demonstrating that once established, it is extremely difficult to reduce it again.



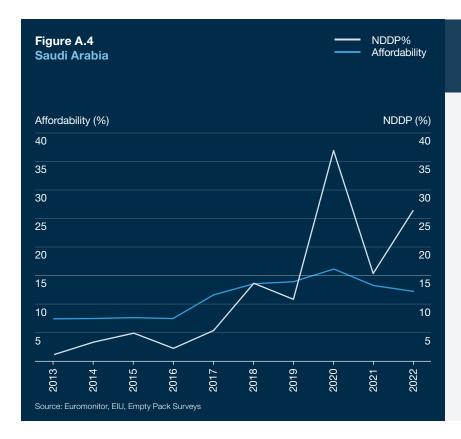
Germany

Tax-driven price increases between 2002 and 2005 put significant and sudden pressure on affordability, which led to NDDP growing from 7% to 20% of total consumption within a short period of time. When Germany revised its tax policy and adopted more gradual and planned tax increases over five years from 2011, NDDP growth was halted and subsequently stabilized at a slightly lower level. During Covid-19, NDDP decreased to 14% in 2021 due to the restrictions of cross-border movements imposed by authorities but started to grow again since then. A new five-year tax plan implemented from 2022 represents a continuation of Germany's

reasonable approach to tobacco tax policy and its

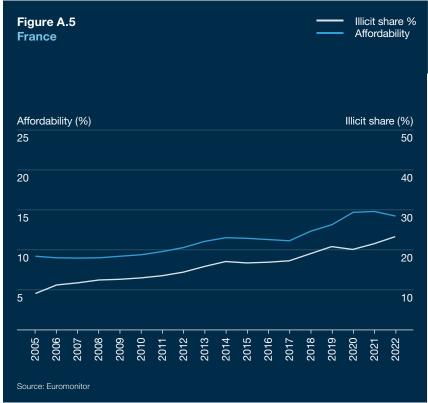
focus on market stability.

AFFORDABILITY AND ILLEGAL TRADE COUNTRY CASE STUDIES



Saudi Arabia

Before the introduction of excise duty in mid-2017 and VAT at the beginning of 2018, cigarette affordability was broadly stable in Saudi Arabia. The significant additional burden, especially from the introduction of excise, caused a significant increase of prices and affordability pressure on consumers to effectively double by 2019. The introduction of minimum excise tax (MET) in December 2019 further increased prices for value cigarettes, resulting in an increase of NDDP to a staggering 37% in 2020, particularly driven by price-conscious consumers. A tax freeze has helped ease affordability pressure slightly in recent years, with NDDP consumption marginally declining.



France



Until 2011, cigarette affordability and the share of illicit trade were relatively stable in France. Several higher excise increases between 2012 and 2014 led to an initial marked deterioration of affordability that was accompanied by a commensurate increase of illegal trade. Significantly higher and more fast-paced increases between 2017 and 2020 caused a rapid increase of affordability pressure and accelerated the already growing trend of illegal trade.



CONTROLLING ILLEGAL TOBACCO TRADE: THE ROLE AND LIMITS OF ENFORCEMENT

The analysis shows that the level of illegal trade is connected to the strength of enforcement in different markets.

Countries with lower levels of illegal trade (shown in dark blue on the following page, see legend) exhibit stronger enforcement controls, suggesting that robust enforcement can help cushion the predictable effects of less affordable legal products on illegal trade.

Our econometric analysis provided further evidence for the impact of enforcement on illegal trade. Using our A&M Enforcement Index, which measures enforcement levels across countries based on the degree of corruption and the effectiveness of crime control in their jurisdictions, we found that improvements in enforcement are associated with a significant reduction in illegal market share.

Key Insights

Enforcement can help disrupt the supply of illegal tobacco products. **Our A&M Enforcement Index shows that** countries with stronger enforcement enjoy generally lower illegal share.



Governments cannot rely solely on enforcement to control illegal trade and disregard the more important influences of taxation and affordability pressure on the demand side.

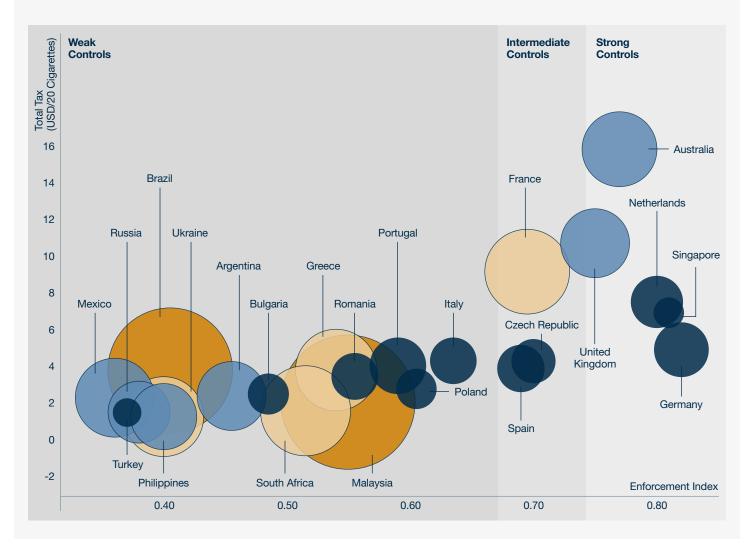


Enforcement is most effective when all key stakeholder groups collaborate to share information, establish appropriate legislative frameworks and implement robust AIT strategies.



Figure 2
Enforcement & Illicit Trade (2022)





According to our modelling, when a country's enforcement improves – moving from an average level to a higher level of enforcement¹² – its illegal market share decreases by 1.6 percentage points.

We also found a correlation between countries: a 1 percentage point increase in the illegal market share of a bordering country would increase the illegal share in the domestic market by 0.3 percentage points.

This suggests that investments in enforcement in one country can contribute to improvements in neighboring nations. Therefore looking only at the returns achieved in the home country underestimates the total benefit of such measures.

THE LIMITS OF ENFORCEMENT

It makes sense that countries which levy higher taxes on cigarettes can devote more resources to enforcement. However, there are inevitable limits to the effectiveness of enforcement in different markets. Each country reflects different geographic, political or cultural circumstances that affect the types and robustness of enforcement required to best control illegal trade. In addition, the investment needed to deliver an appropriate enforcement strategy will vary dramatically from country to country.

More generally, the sustainability of policies that raise taxes on cigarettes, in the expectation that enforcement will mitigate the unintended effects on illegal trade, should be questioned. One of the major determinants of the level of illegal trade in a market is tax policy. Strategies to control illegal trade should therefore start by considering the impact of taxation on the affordability of cigarettes. Such strategies, combined with appropriate enforcement, can deliver predictable tax revenue generation and lower illegal trade.



INTERNATIONAL COLLABORATION IS VITAL IN THE FIGHT AGAINST ILLEGAL TRADE

Because of the complexity involved in delivering an impactful enforcement strategy, effective collaboration between all relevant stakeholders - governments, regulators, enforcement agencies and tobacco companies - is essential. The most effective solutions to tackle illegal trade have involved collaboration and coordination between regional and national governments, the health community, enforcement agencies, customs and excise authorities, as well as the industry.

As illegal trade is a global problem, it can only be tackled with international cooperation. This can be achieved through collaboration between individual countries. such as through customs cooperation or expertise sharing; through regional cooperation, such as at the EU level; and at a global level, for instance through the World Customs Organization, INTERPOL or the World Health Organization's Framework Convention on Tobacco Control (FCTC) and its Protocol to Eliminate Illicit Trade in Tobacco Products¹³ (the AIT Protocol).



Track and Trace (T&T) systems, which record the movement of legitimate tobacco products through unique identifiers embedded in each unit, increasingly form part of international enforcement efforts.

The EU included T&T as a requirement in its 2014 Tobacco Products Directive (TPD). T&T also features as an element of individual countries' enforcement strategies, such as in the U.K., some of the Gulf Cooperation Council (GCC) countries, Jordan, Kazakhstan, Uzbekistan and Burkina Faso.

While T&T programs are undoubtedly beneficial, it is important for policymakers to understand that they can only address legitimate supply chains and are therefore not a "silver bullet" solution. Additionally, T&T can only help identify cross-border flows if approached from an international perspective and if the technology chosen is interoperable.

Effective AIT measures must directly target criminal operations, increasing the risk and reducing the reward of trading illegal products through high fines and strong enforcement that raises the probability of being caught.

Enforcement actions against illegal tobacco also depend on effective public-private collaboration between governments (as lawmakers and enforcers) and major, legitimate tobacco companies. Legitimate tobacco manufacturers' objectives regarding the fight of illegal trade are aligned with those of policymakers and enforcement agencies. Their sector expertise and global experience should be a material consideration when countries are formulating strategies against illegal trade.

We have shown that enforcement can play an important complementary role in helping disrupt illegal trade in addition to fiscal policy, which, as the primary driver of affordability, has a major impact on the demand for illegal tobacco.

Examples of AIT programs established by major tobacco companies

Know Your Customer

Policies to ensure tobacco companies will (a) only do business with and supply product to trade customers who have a reputation for honesty and integrity and are not involved in the diversion of product into the illegal trade, and (b) only supply product that meets fiscal, legal and regulatory requirements of the intended retail market



Know Your Supplier

Policies to ensure that tobacco company suppliers are known for honesty and integrity (e.g., that a warehouse or trucking company will not illegally sell goods) and do not engage in providing materials, machinery or services to illegal trade operators



Security Programs

Measures that specifically lower the risk of product theft during transportation, thereby reducing the likelihood of stolen genuine product entering the market



Anti-Money Laundering

Policies to mitigate the risks of tobacco products being used by money launderers as instruments in financial systems



Legitimate **Market Demand**

Monitor market and volume developments to ensure products are only supplied in quantities commensurate with legitimate market demand and consumption in the intended market of retail sale



Detection of Genuine Product Diversion

Product seizure investigation and track and trace capabilities, which enable tobacco companies and law enforcement to detect where genuine products were diverted from legitimate supply chains into unintended markets



Cooperation with Government

Cooperative Partnerships (e.g., with EU member states) and memoranda of understanding (MoUs) with law enforcement agencies





EMERGING NICOTINE AND TOBACCO PRODUCTS: A NEW DIMENSION IN ILLEGAL TRADE

The past decade has seen a rapid increase in the availability and use of alternatives to traditional tobacco products such as e-cigarettes, heated tobacco products (HTPs) and nicotine pouches, collectively known as RRPs.

E-cigarettes, or e-vapor products, heat liquids that may or may not contain nicotine as well as flavorings. They can be either reusable or disposable. HTPs contain tobacco and create a tobacco-enriched vapor that can be inhaled. Importantly, the tobacco is not combusted during the use of HTPs. Nicotine pouches are small, permeable pouches that release nicotine and flavors by placing the pouch in the mouth, under the gum, rather than through inhalation.

Since 2020, a new generation of disposable e-cigarettes has gained consumer traction, particularly in the U.S., after flavor restrictions on cartridge-based e-cigarettes were introduced¹⁴.

These trends have expanded to Europe and other regions, with disposable e-vapor now becoming the preferred consumer choice within the RRP category in several markets. The segment is estimated to account for approximately 30% of the total e-cigarette sales value in the EU in 2023¹⁵.

Globally, the market value for RRPs is estimated at \$78.3 billion in 2023, with Italy, the U.S., the U.K. and Japan among the top ten fastest-growing markets¹⁶.

THE GLOBAL LANDSCAPE OF RRP REGULATION

Approaches to the regulation of RRPs across the world vary widely, from flavor restrictions, pre-market authorization and ingredient regulation to outright category bans, among other policy options.

More recently, regulatory scrutiny of RRPs has increased in response to public pressure in relation to their alleged role in youth uptake and, in the case of disposable e-vapor, their negative environmental effects. E-cigarettes in particular are currently allowed in 79 countries, unregulated in over 80 countries and banned in more than 30 countries¹⁷. Finland and the Netherlands are some of the countries already prohibiting sales of flavored e-vapor products, while legislation will soon be tightened in France and Belgium (where online sales of e-vapor are already banned).

Meanwhile, legislation on HTPs is being brought in line with tobacco products. EU member states, for example, are banning HTPs with a characterizing flavor after an EU directive became law in July 2023. Cigarettes with characterizing flavor were banned in the EU in 2016, while a ban on menthol cigarettes sales went into effect in 2020.

In terms of taxation, the EU is mulling extending its bloc-wide excise framework on tobacco products to include RRPs as part of a broader initiative aimed at curbing smoking by 2040.

In the U.K., the government is exploring maintaining a "significant differential between duty on vapes and duty on tobacco products", so that the measures have the biggest impact on youth vaping while ensuring e-vapor continues to support adult smokers to quit.

GROWING APPEAL OF RRPS ADDS NEW DIMENSION TO ILLEGAL TRADE

The growing appeal of RRPs, notably e-cigarettes, is adding a new dimension to the problem of illegal trade, posing challenges for consumers, governments and legitimate economic operators. The illegal e-vapor market is estimated at \$17.7 billion, with more than 500 million devices in circulation globally¹⁸.

The impact of RRPs' growth on the illegal trade of traditional tobacco products is another evolving dynamic. Our modelling found that when consumers increase their spend on RRPs, there is a decline in illegal tobacco market share. So if individuals were to spend an additional \$10 every year on RRPs - or a third more than current spending levels — the illegal market share in cigarettes would shrink by 0.8 percentage points.

In the next section, we explore the distinctive regulatory frameworks adopted by four countries, discussing how contrasting policy responses have led to different RRP market outcomes.





Growing popularity of e-cigarettes despite blanket ban and increased enforcement

In 2018, the Tobacco (Control of Advertisement and Sale) Act made it illegal to possess, purchase and use e-cigarettes in Singapore. The importation of e-cigarettes and HTPs was also prohibited, including online purchasing and shipping for personal use.

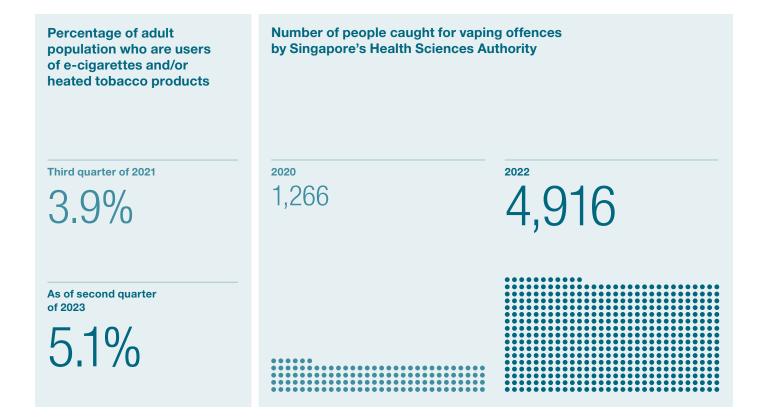
Under the Tobacco Act, any person who is convicted of selling, offering for sale, possessing for sale, importing or distributing e-cigarettes may face a fine of up to S\$10,000 and jail for up to six months. Those caught possessing or consuming an e-vapor can be fined up to S\$2,000.

However, there are indications that the number of people vaping has gone up over the past few years. As of the second quarter of 2023, users of e-cigarettes and/or HTPs accounted for 5.1% of the adult population, compared to 3.9% in the third quarter of 2021, with usage being highest amongst those aged between 21 and 39 years old¹⁹.

In 2022, Singapore's Health Sciences Authority (HSA) caught 4,916 people for vaping offences, an almost fourfold increase compared to the 1,266 people caught in 2020²⁰.

The agency has also stepped up vigilance and enforcement actions against smugglers and sellers, including by partnering with social media platforms such as Instagram to remove sale postings. In October 2021, more than \$2 million worth of e-vapor, components and tobacco products were seized by local authorities at an industrial storage facility near the border with Malaysia²¹.

The growing use of illegal e-cigarettes in Singapore, despite more enforcement, illustrates the challenges of blanket prohibitions in dealing with public health issues such as youth vaping.





Long-standing ban has not prevented recent boom in illegal e-cigarette market

A 2009 ban on sales and imports of RRPs in Brazil has not prevented a large e-cigarette market from being established in the country.

The category boomed during the reopening of the economy post-Covid, when consumers switched from open e-vapor systems to disposable devices in large numbers. Despite being illegal, overall consumption has quadrupled in the last four years, with 2.2 million adults claiming to have used an e-cigarette within 30 days prior to a survey²⁶ interview in 2022. Notably, products are widely available via specialized websites, social media as well as formal and informal retailers.

Between 2019 and 2022, illegal sales grew at a 77% CAGR (compound annual growth rate), reaching 4.2 million units in 2022²².

Brazil's rampant illegal market and ready accessibility suggest that the ban on RRPs has been ineffective in curbing consumption. Instead, they have fuelled an unregulated market that encourages underage sales through ostentatious (illegal) promotion in-store and awareness creation on social media.

The approach also fails to protect consumers from illegal products that are potentially defective or dangerous. Many Brazilian consumers are unaware that their e-cigarettes are smuggled goods, and therefore are oblivious to their potential exposure to the ingredients in unregulated products that may be harmful. The closed e-vapor systems offering in Brazil is focused on the 5% nicotine strength variant (50 mg/ml)²³, making the category two to three times stronger than conventional cigarettes.

Brazil's complete ban of RRPs represents a lost opportunity to create a regulated RRP market that ensures product quality and safety to provide adult smokers with the choice of switching to potentially lower health-risk alternatives to cigarettes, while restricting access to vulnerable groups.

Growth of illegal sales between 2019 and 2022

growth rate

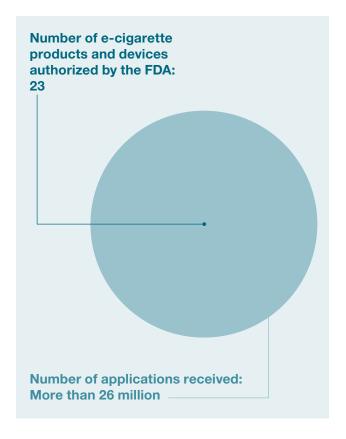
Overall consumption of vapor products quadrupled in the last four years



Enforcement gaps and regulatory burden lead to flood of unauthorized e-cigarettes in the marketplace

The Food and Drug Administration (FDA) regulates e-cigarettes as tobacco products since 2016, when it introduced a pre-market tobacco application (PMTA) pathway for manufacturers seeking authorization to market.

In addition to the federal law, far-reaching regulations from state and local governments targeting e-cigarettes have been introduced in recent years. The application of flavor restrictions and excise tax varies between states, with some not applying either, others applying excise tax up to 95% of the wholesale price or banning all non-tobacco flavors.



To obtain a PMTA, manufacturers must produce a comprehensive scientific dossier to demonstrate that their products are appropriate for the protection of public health. This is resulting in an excessively high barrier to entry, given few companies can comply with the required scientific evidence and the costs of the PMTA process.



In fact, up to January 2024, the FDA has authorized only 23 tobacco-flavored e-cigarette products and devices from more than 26 million applications received²⁴. Significant delays in the review of applications and legal cases brought by companies to dispute FDA denials have also been common.

Meanwhile, thousands of unauthorized products continue pouring into the country, with several large seizures by federal officials at U.S. ports taking place recently. More than 11,500 unique e-cigarette products are being sold in U.S. stores, up 27% from 9,000 products in June 2023, according to industry data from analytics firm Circana.²⁵

The flood of new products suggests that despite the more stringent regulation, unauthorized – and potentially harmful – e-cigarettes are still making their way to consumers. The problem is compounded by weak enforcement action, with the FDA²⁰ so far failing to keep these products off shelves. The nature and scale of the problem calls for a much more robust and coordinated compliance and enforcement program than what exists today.

The current situation, where the regulations and laws are fragrantly defied, threatens the long-term viability of a well-regulated market that prevents underage use and delivers on harm reduction for adult smokers.



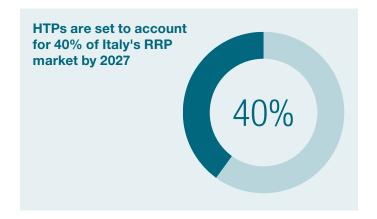
Clear regulation regime and excise tax help create a controlled RRP market

In Italy, RRP manufacturers need to notify different national authorities when launching a product in the market, adhere to a range of product specifications including on pack warnings and submit annual reports to the competent authorities. Furthermore, advertising is generally prohibited.

Italy has also implemented a stringent licensing system for sellers of RRPs, similar to that of combustible tobacco products. Merchants that do not comply with the law for example, those allowing a minor to purchase an e-cigarette - face severe consequences, including the closure of the business and the loss of their license. Online sales are prohibited.

As the different categories continue to grow, the government is introducing gradual and moderate tax increases while keeping a reasonable gap relative to cigarette excise. This is accompanied by effective enforcement by Italian law enforcement agencies to prevent the growth of illegal trade, with several large e-vapor seizures taking place in recent years.

Amid clear regulatory boundaries, Italy has emerged as one of the fastest growing markets for RRPs globally. Notably, the HTP category grew strongly in the country in 2022 as more smokers migrated from cigarettes to heated tobacco, which is forecast to account for 40% of Italy's RRP market by 2027²⁶. Tax revenues from heated tobacco products reached approximately €1.16 billion in 2022, according to an annual report by Italy's Customs and Monopolies Agency.



OUTRIGHT BANS DO NOT SOLVE THE CHALLENGES BROUGHT BY EMERGING PRODUCTS

As these country experiences show, outright bans on RRPs will not eradicate demand for these products from the market. Amid growing consumer demand, illegal traders will find ways to make RRPs available, bringing additional risks to consumers and leaving governments with limited mechanisms to deal with the societal, operational and environmental challenges of these products.

From a harm reduction perspective, treating RRPs as restrictively as tobacco products, including through the same level of excise as conventional cigarettes despite reportedly unequal health risks, may discourage smokers from switching to potentially less harmful alternatives.

To ensure the safety and quality of commercialized RRPs for adult smokers and prevent a hard-to-control illegal market, governments should strive to implement a regulatory framework that is proportionate and ultimately helps adult smokers consider less harmful products within the regulators' oversight. An effective tax environment is also critical as it provides governments with additional revenues that can be channeled to better enforcement against the illegal trade, thereby reduce criminality.



OVERALL CONCLUSIONS

Governments, regulators and enforcement agencies can only address the persistent growth of illegal trade by understanding its causes. Evidence demonstrates that increases to tobacco taxes that make cigarettes less affordable contribute to the growth in illegal trade as consumers seek out cheaper products.

Our data go further than previous editions in adding variables that show the impact of specific market conditions, such as the level of enforcement, geography and RRP expenditure, on the size of illegal markets.

Governments need to be aware of the risk that fiscal policies can inadvertently expand opportunities for organized criminal gangs and terrorist networks and open up new avenues for consumers seeking cheaper tobacco products. Enforcement can only make a worthwhile contribution to controlling illegal trade if it is accompanied by tax policies that limit incentives for consumers to switch from legal to illegal products in search of cheaper options.

Countries planning their responses to illegal trade whilst seeking to bolster public finances have a delicate balance to strike. Raising revenues on excisable goods may seem like an 'easy win'. But, as we have seen, tax increases can also result in affordability pressures – even more so if inflationary pressures continue to result in declining real

incomes. Any subsequent growth in the share of illegal trade will only harm tax revenues and limit the desired public health benefits.

Successfully tackling illegal trade is critically important and can only be achieved through a coordinated effort involving all key stakeholders including policymakers, regulators, fiscal authorities, law enforcement agencies, public health professionals and legitimate tobacco companies. When planned together, taxation policies and enforcement can help policymakers deliver proportionate and targeted programs that respond to the specific circumstances of each country.

It is our hope that by understanding the relationship between tax policy, affordability and consumers' propensity to buy illegal products, we can aid the formulation of practical but ambitious policy goals that support government revenues and help tackle illegal tobacco's destructive influence on society.

Appendix I:

METHODOLOGY

This annex describes the panel dataset used for the analysis, as well as the econometric modelling strategy and results that underpin our conclusions on the link between affordability and illegal consumption.

Dataset construction

The analysis utilises a panel dataset tracking 71 countries representing 81% of global cigarette volume and 91% of global cigarette retail value, excluding China.

Over a 17-year period from 2005 to 2022, we tracked:

- Volume: Retail volume measured in million sticks (Source: Euromonitor).
- Volume per capita: Retail volume measured in number of sticks per capita (Source: Euromonitor).
- Price: Price per 1,000 sticks measured in local currency (Source: Euromonitor).
- Affordability: Share of daily personal disposable income required to purchase 20 cigarettes (Source: A&M calculation based on Euromonitor and EIU data)
- Illicit share: Share of illicit tobacco volume in total (retail and illicit) volume (Source: Euromonitor).
- Tax burden: Excise duties and VAT on the weighted average price. (Source: JTI).

- A&M Enforcement Index: While this remains based on World Justice Project data as in the previous analysis, it is now based on more granular measures of a country's effectiveness of enforcement (in particular, measure 2.3 "Government officials in the police and the military do not use public office for private gain" and measure 5.1 "Crime is effectively controlled").
- Neighboring countries: Information on countries which share a land border (Source: GeoDataSource).
- Unemployment: Share of the labor force in unemployment (Source: World Bank).
- RRP spend: Annual per-capita spend on reduced-risk products (RRP) in US dollars (Source: Euromonitor).

The data provide a maximum of 1,278 country-year observations on each of these variables, facilitating the use of standard panel data econometric methods²⁷.

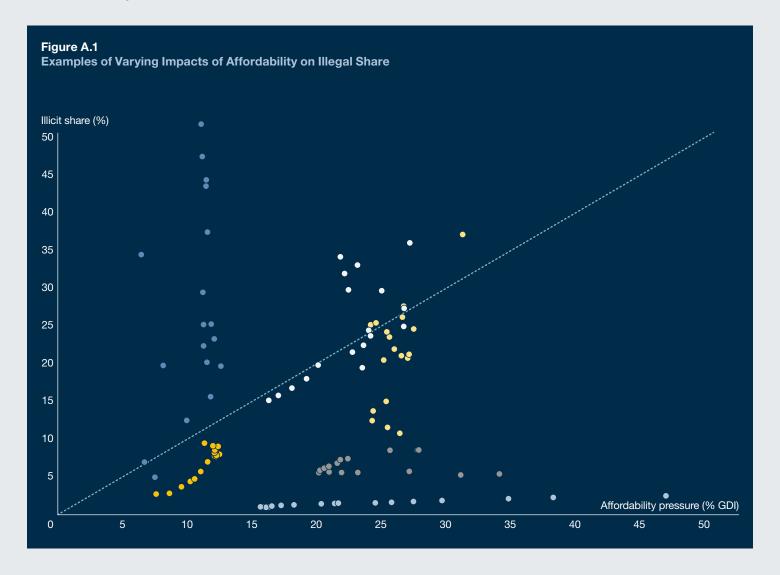
Modelling the effect of affordability on illegal tobacco consumption

Our conclusions on the impact of affordability on illegal tobacco consumption are underpinned by econometric analysis of a panel data set across 71 countries and 17 years. We used this panel data structure to gauge whether the affordability of cigarettes causes changes in illegal consumption.

Visual inspection of the panel dataset indicates that the relationship between illegal share and affordability varies by country. Each color corresponds to a specific (anonymized) country's progression over time, demonstrating the range of different responses in terms of illicit share growth as affordability changes over time. Some countries show no apparent relationship, while others display near 1-to-1 correlations (Figure A.1):

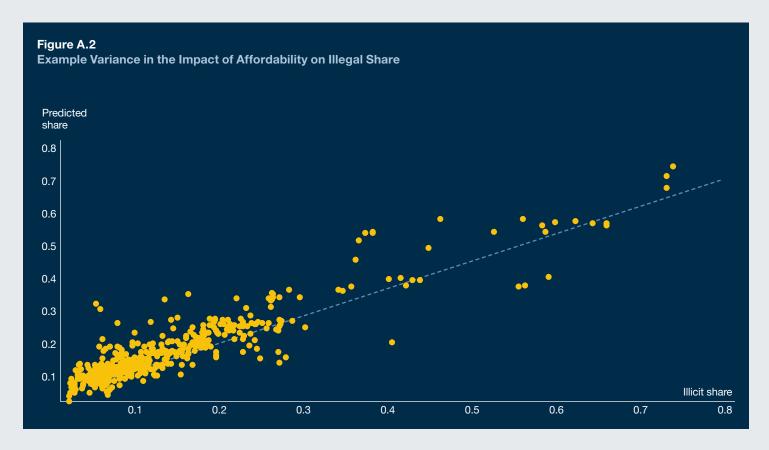
The panel data structure, with observations for each country over several years, can be used to test for a causal relationship between affordability and illegal consumption by using fixed effects estimation. This controls for the effect of all differences across countries that are constant over time – such as proximity to other countries – whether such differences are observable or not. The models also include controls for variation through time that are common across all countries in the sample.

Our fixed effects approach measures the impact of changes in affordability through time on illegal share within a country. The models test for and quantify the average effect of affordability on illegal share across the countries included in the analysis.



Impact of affordability

Figure A.2 below displays the results of our analysis, using the World Bank's Worldwide Governance Indicators to track all countries in the sample from 2005 onwards. Figure A.2 provides a graphical illustration of the strength of fit using the fixed effects model.



The estimated coefficient on affordability is statistically significant in both specifications, ranging from 0.6 (full sample, no additional controls) to 1 (neighbor sample only, controls for enforcement, unemployment, RRP market share and neighbor illegal share). This implies that any additional percentage point of personal disposable income required to purchase 20 cigarettes is associated with a 0.6 to 1 percentage point rise in the illegal market share.

Instrumental variable model

We also conducted an instrumental variables estimation to better establish this causality. Instrumental variable models are commonly utilized in economics to address so-called endogeneity problems – a situation in which the explanatory variable of interest is correlated with another unobserved variable that also drives the outcome.

In the present case, we wanted to explore potential endogeneity issues of our measure of affordability pressure. Affordability pressure is calculated based on personal disposable income and cigarette prices, which in turn are made up of producer prices and excise duty. These two factors are determined by government choices on excise rates, and cigarette manufacturer's decisions on the pricing of their products.

Such conscious, strategic behaviours might bias the estimates of elasticity. To deal with that, we introduced a non-endogenous variable that is correlated with the endogenous variable. We opted to use the excise duty levied by governments because, in practice, government decisions on excise levels are largely driven by public health objectives or wider fiscal objectives and are unlikely to be taken with a view to influence the illicit market share²⁸.

We found even higher estimated elasticities in our instrumental variable modelling, with estimates in the range of 0.8 to 1 for models that include the majority of the available data, and even higher than 1 for the subsample of countries for which neighbor information is available.

Overall, we find that the impact of affordability on illegal consumption is both statistically significant and economically meaningful. On average, for every additional percentage point of personal disposable income required to purchase 20 legal cigarettes, the share of illegal tobacco rises by 0.8 percentage points.

Appendix II:

GLOSSARY OF TERMS

Affordability Index: Percentage of personal disposable income per capita per day required to purchase one pack of cigarettes, most commonly referring to the weighted average price (WAP).

Counterfeit: Illegal manufacturing where product bears a trademark without the owner's consent.

Illegal / illicit Trade: Commonly defined as "the act of importation, exportation, handling or possession of goods in violation of the law. Usually done to evade duties and taxes." Illicit trade in tobacco products comes in different forms and permutations.

Non-Domestic Duty Paid (NDDP): Products on which taxes in the country of consumption have not been paid. NDDP includes both legal cross-border and all illegal trade.

Personal Disposable Income (PDI): The amount of money available to individuals or households for spending after taxes and deductions.

Tracking and Tracing: Systematic monitoring and recreation by competent authorities or any other person acting on their behalf of the route or movement taken by items through the supply chain.

Weighted Average Price (WAP): Total value of cigarettes based on the retail selling price including all taxes, divided by the total quantity of cigarettes sold.



Appendix III:

BIBLIOGRAPHY

- Reduced-risk products (RRPs) are defined as products with the potential to reduce the risks associated with smoking.
- https://www.actso.org.uk/impacts-outcomes-reports/
- 3 International Monetary Fund: Fiscal Policy: How to Design and Enforce Tobacco Excises." November 2016.
- Euromonitor International: "Key Findings in Global Nicotine". July 2023.
- Euromonitor International: "Illicit Trade in Tobacco Products". 5 July 2023.
- https://anti-fraud.ec.europa.eu/media-corner/news/ illicit-tobacco-trade-over-half-billion-cigarettes-seized-2022-2023-04-04 en
- EUIPO: "Intellectual Property Crime Threat Assessment 2022." 2022.
- RUSI: "E-commerce, Delivery Services and the 8 Illicit Tobacco Trade." October 2018.
- OECD: "Illicit Trade Converging Criminal Networks, Chapter: A Brief Overview of Illicit Trade in Tobacco." April 2016.
- 10 Excise tax plus value added tax (VAT).
- University of Cape Town, Research Unity on the Economics of Excisable Products (REEP): "Lighting Up The Illicit Market Report: Smoker's Responses to the Cigarette Sales Ban in South Africa." May 2020.
- 12 Measure constructed from the average of measures for corruption in policy and military and the effectiveness of overall control of crime, based on data from the World Justice Project. Improvement is measured by an increase in the enforcement score from the median score across markets in 2022 (1.17) to the score at the 75th percentile (1.32).
- 13 WHO Framework Convention on Tobacco Control: "Protocol to Eliminate Illicit Trade in Tobacco Products." May 2013.
- 14 Euromonitor International: "The Rise of Illicit Trade in E-Vapour: Drivers and Solutions." February 2021.
- 15 ECigIntelligence Global Market Database.
- 16 Euromonitor International: "Key Findings in Global Nicotine." July 2023.
- 17 Abifumo: "Regulation of Electronic Cigarettes: Public Hearing." September 2023.

- 18 Euromonitor International: "Key Findings in Global Nicotine." July 2023.
- 19 Milieu: "Usage & Attitudes Report: Cigarettes & Nicotine Delivery Products." June 2023.
- 20 The Straits Times: "Illicit Vaping on the rise, more caught in 2022." Accessed in November 2023.
- 21 Vice: "A Country that Banks Vaping Just Busted \$1 Million Worth of Products." Accessed in November 2023.
- 22 Ipec, 2022 cited in Abifumo: "Regulation of Electronic Cigarettes: Public Hearing." September 2023.
- 23 Euromonitor International: "Illicit Market: E-Vapors & Flavored Cigarettes in Brazil." September 2023.
- 24 FDA. "FDA Denies Marketing of Bidi E-Cigarette." January 2024.
- 25 The L.A. Times: "Illegal e-cigarettes are flooding the ports in Southern California and beyond." January 2024.
- 26 Euromonitor International: "Smokeless Tobacco, E-Vapour Products and Heated Tobacco in Italy." June 2023.
- 27 The total data set includes 1,278 country-year observations, however data on the control variables used in the analysis is not available for all countries and years. As such the number of observations used in estimations varies according to which variables are included in the model.
- 28 This argument is also made by Prieger & Kulick (2018), who show that there is historically no relationship between excise levels and smuggling levels in Europe.

IMPORTANT NOTICE

This booklet has been prepared by Alvarez & Marsal Corporate Performance Improvement LLP ("A&M") and was commissioned by JT International SA ("JTI") on the terms and conditions set out in an assignment schedule dated 20 October 2023 between A&M and JTI. A&M's information sources, limitations to sources, as well as the scope and limitations of A&M's work are set out in this booklet. A&M has not performed an exhaustive review or sought to test the reliability of the information drawn from such sources by comparison with other evidence. A&M has, however, taken measures to confirm as far as practical that the information presented in this booklet is consistent with the sources referenced. A&M's conclusions expressed in this booklet are based on our analysis of the facts available to us subject to the limitations set out above and do not represent an endorsement of any specific policy decisions or statements. This booklet is not suitable to be relied on by any party wishing to acquire rights or assert any claims against A&M (other than JTI to the extent agreed in the assignment schedule) for any purpose or in any context.

While this booklet will be made available to third parties, such disclosure shall not in any way or on any basis alter or add to or extend A&M's duties and responsibilities to JTI. Furthermore, such disclosure shall not imply A&M accepts or causes any duty of care or other responsibility to any third party other than JTI to be accepted by A&M. To the fullest extent permitted by law, A&M will not accept any liability or responsibility in connection with this booklet to anyone except JTI to the extent agreed in the assignment schedule.

In particular, but without limitation, this booklet has not been prepared for the benefit of any other manufacturer or distributor of tobacco products, any government agencies, organizations, groups or persons working in the public or private health sector, monitoring the tobacco sector or publishing about it, providing goods or services to any parties or government agency being part of or dealing with the tobacco sector or any government agency, organization, group or person who might have another interest in the matters discussed herein, regardless whether commercial or in any other form.

EUROMONITOR INTERNATIONAL DISCLAIMER

Information in this report cited as being sourced from Euromonitor International is from independent market research carried out by Euromonitor International Limited but should not be relied upon in making, or refraining from making, any investment decision.



Follow A&M on:

ABOUT ALVAREZ & MARSAL

Companies, investors and government entities around the world turn to Alvarez & Marsal (A&M) for leadership, action and results. Privately held since its founding in 1983, A&M is a leading global professional services firm that provides advisory, business performance improvement and turnaround management services. When conventional approaches are not enough to create transformation and drive change, clients seek our deep expertise and ability to deliver practical solutions to their unique problems.

With over 9,000 people providing services across six continents, we deliver tangible results for corporates, boards, private equity firms, law firms and government agencies facing complex challenges. Our senior leaders, and their teams, leverage A&M's restructuring heritage to help companies act decisively, catapult growth and accelerate results. We are experienced operators, world-class consultants, former regulators and industry authorities with a shared commitment to telling clients what's really needed for turning change into a strategic business asset, managing risk and unlocking value at every stage of growth.

To learn more, visit: AlvarezandMarsal.com

